ONTARIO MINISTRY OF ENVIRONMENT
36936000021242

LIBRARY COPY
JUN 21 1965
ONTARIO WATER
RESOURCES COMMISSION

ANNUAL REPORT

1961

BRAMPTON - CHINGUACOUSY

TD
367
.A56
B734
1961
MOE

LABORATORY & RESEARCH LIBRARY
MINISTRY OF THE ENVIRONMENT

TD
367
.A56
B734
1961

Brampton - Chinguacousy
sewage treatment plant : annual
report 1961.
82301

ONTARIO WATER RESOURCES COMMISSION

Chairman	A. M. Snider
General Manager	A. E. Berry

BRAMPTON - CHINGUACOUSY

SEWAGE TREATMENT PLANT

ANNUAL REPORT

1961

Prepared by:

Division of Plant Operations

Director	D. S. Caverly
Supervisor, Sewage Projects	B. C. Palmer
Project Engineer	A. Clark

ANNUAL REPORT

TOWN OF BRAMPTON - CHINGUACOUSY TOWNSHIP

Brampton Sewage Treatment Plant

General Information:

The plant is situated on the second line east, south of the base line in the Township of Toronto. The sewage arrives at this sewage treatment plant from three general areas,

(a) The trunk sewer from Main Street in Brampton. This sewer takes what the sewage treatment plant in town cannot handle and carries it via 36 and 42 inch pipes to the OWRC plant a distance of 3.1 miles approximately.

(b) Trunk sewer from that portion of town from Kennedy Road eastward. This sewage enters the plant via a 27 inch diameter pipe.

(c) Sewage forcemain from Bramalea Pumping Station in the Township of Chinguacousy. This is a 10 inch line.

These three sewers meet in a common manhole in which there is a 33 inch diameter by-pass which operates during excessive flooding. From this manhole there is a 24 inch diameter pipe to the influent works. Here the sewage first passes through a barminutor then to the aerated degrittor, which is,

15'6" long
7'0" wide
9'6" deep

There is a hopper incorporated in this with an air lift pump for removing grit to a decanting box. The sewage then flows through a Parshall flume where it is measured and the flow recorded in gallons per day.

The sewage next goes to the primary clarifier which is

42'0" square, and
10'0" deep

This clarifier has sludge collecting sweeps on the bottom which gather the settled solids to a sump at the centre and from there they gravitate to a pit

10'0" deep
3'0" square

There is also a scum collecting arm working at water level. Skimmings also go to the pit. The solids and skimmings are pumped to a digester described later.

The sewage then flows over weirs and into the aeration sections. These are two in number each

95'0" long
24'0"
~~[illegible]~~ wide
15'0" deep

Aeration is accomplished by sparger diffusers, 48 per section. Effluent from the primary clarifier is via a 14" diameter pipe with entrance ports at 23' centres along the tanks each with a gate valve.

The effluent from the aeration sections enters the final clarifiers. These are two in number, each 32' square and approximately 10' deep. These clarifiers are fitted with rotating sweeps on the bottom collecting sludge to hoppers where it is returned to the aeration sections or to waste in the primary clarifier.

The effluent from the primary clarifiers is over weirs to a chlorine contact chamber, the dimensions of which are

30'0" long
15'0" wide, and
7'0" deep approximately

Here it is mixed with an injected chlorine solution by means of blown air. The effluent from this chamber goes to the Etobicoke Creek.

Sludge from the primary clarifier is pumped to the digester. The dimensions are approximately 20' deep and a diameter of 50'0". The basic purposes of this digester here is to reduce the odour of the sludge and to decrease its volume. The gas produced is utilized to heat the incoming sludge and to heat the buildings. When gas supply fails, the heater runs on oil. Digested sludge is pumped to the drying beds where it dries and is removed by the Town of Brampton Parks Department.

The main control building houses the aeration blowers, raw and return sludge pumps, controls and chlorinator. There is a lunch room, laboratory and office in this building.

Normal operation of the plant is accomplished by one chief operator and two operators. Use is made of casual labour in summer months for the cutting of grass. The sewage pumping station at Bramalea is serviced by the plant staff.

Digitized by the Internet Archive
in 2015

https://archive.org/details/bramptonchinguac21242

OPERATION

The Sewage Treatment Plant was in operation throughout 1961. The year began with the plant receiving sewage of moderate strength and of an amount within the plant capacity although the mid day flows were rather high. As the year progressed, the flow increased hydraulically and organically, until by mid summer, the plant was overloaded during the daylight hours and did not have the opportunity to recover fully during the night. This lead to a treatment of modified aeration which is not as efficient as that for which the plant was designed. It was early in the year that the Bramalea pumping station began contributing its flow to the sewage treatment plant. Investigations were begun in September 1961 to determine the flow characteristics of the sewage arriving at the plant. The early results were such that a more extensive study was made. The results of these investigations were made available to the consulting engineers for their use in design of the plant extension. About this time the chief operator fell into bad health. He took sick leave under medical direction, but his health did not improve and he left the service of the Commission on December 1, 1961.

During his absence the plant was run by the two regular operators with casual labour to lighten the work load.

The year ended with treatment slightly improved and sufficient information has now been amassed to justify the plant being improved and enlarged in 1962.

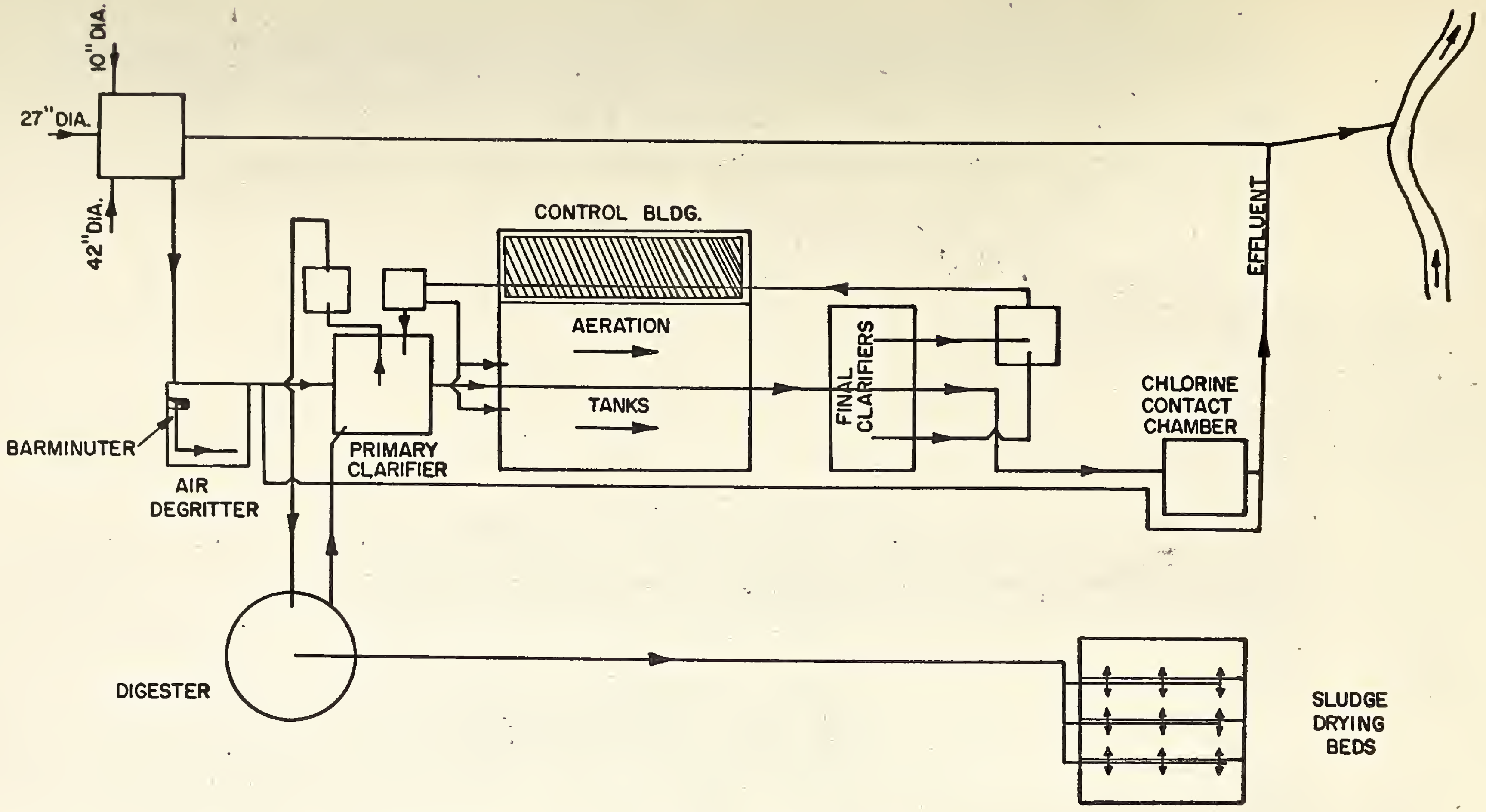
The following graphs give an indication of the strength and quantity of sewage treated.

Figure 1 indicates the quantity but does not indicate hourly or daily maximum or minimum flows. These vary in extreme from 0.3 to 7.0 mgd.

Figure 2 shows raw sewage samples which are mostly eight hour composites.

Figures 3 and 4 indicate percentage removal of BOD and suspended solids which, although faily high, do not show the imperfect quality of the final effluent.

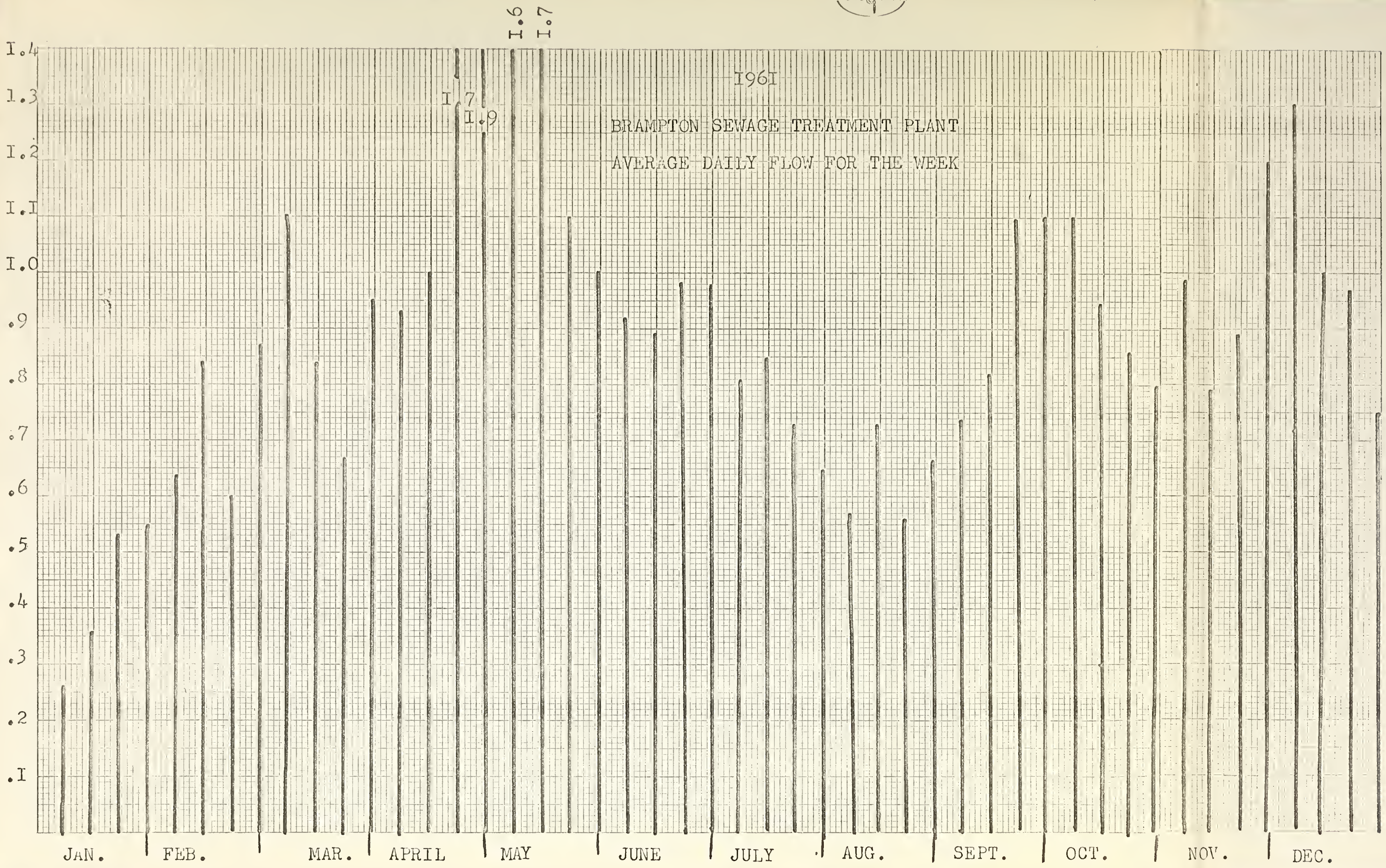
In conclusion, every endeavour is being made to achieve maximum treatment with the present facilities and it is anticipated that much better results will be obtained when the plant is enlarged in 1962.



— BRAMPTON OWRC SEWAGE TREATMENT PLANT —

FLOW DIAGRAM

G8-11
10 X 10 TO THE ½ INCH
MADE IN CANADA
CC&S MICROGRAPH

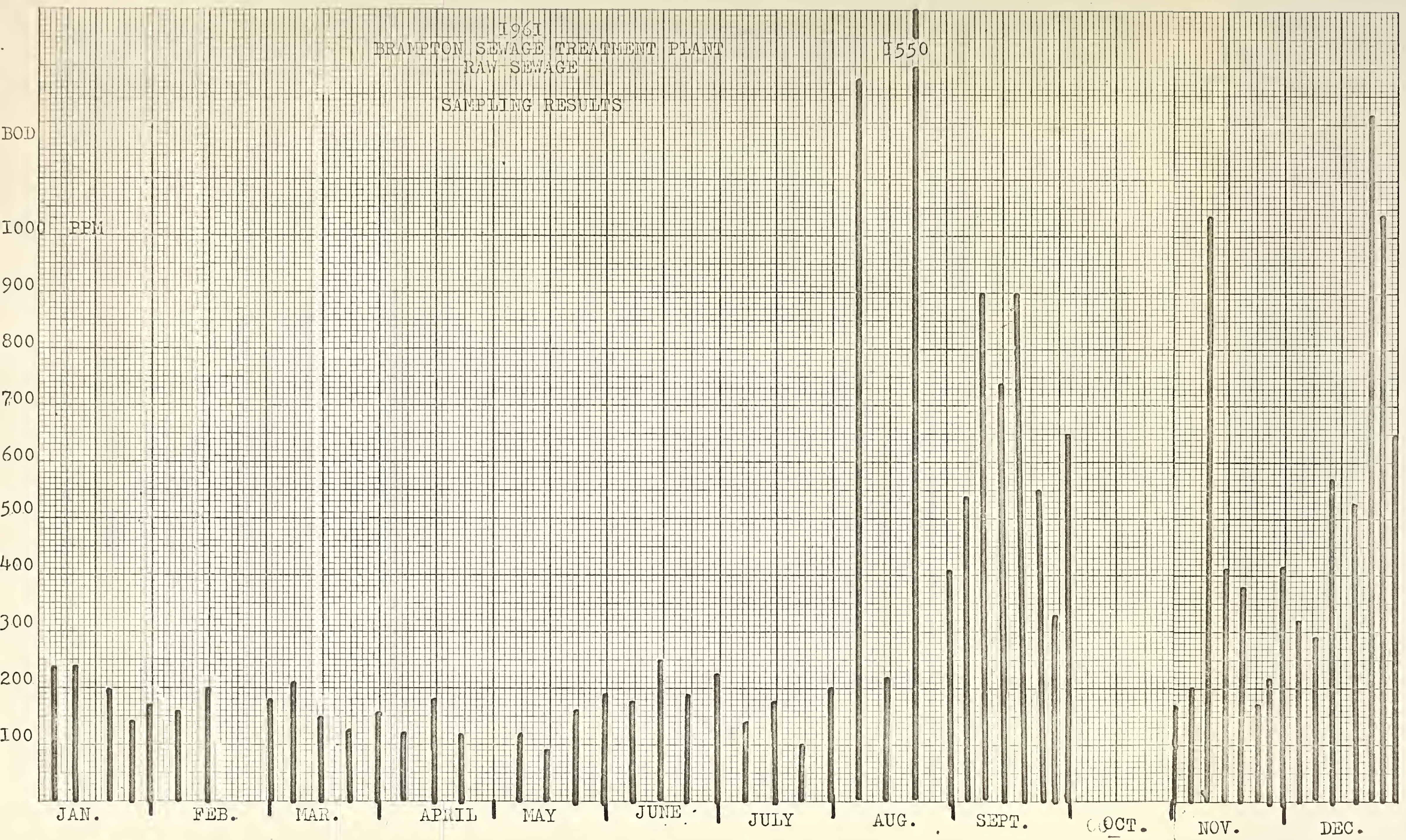


1961

BRAMPTON SEWAGE TREATMENT PLANT

AVERAGE DAILY FLOW FOR THE WEEK

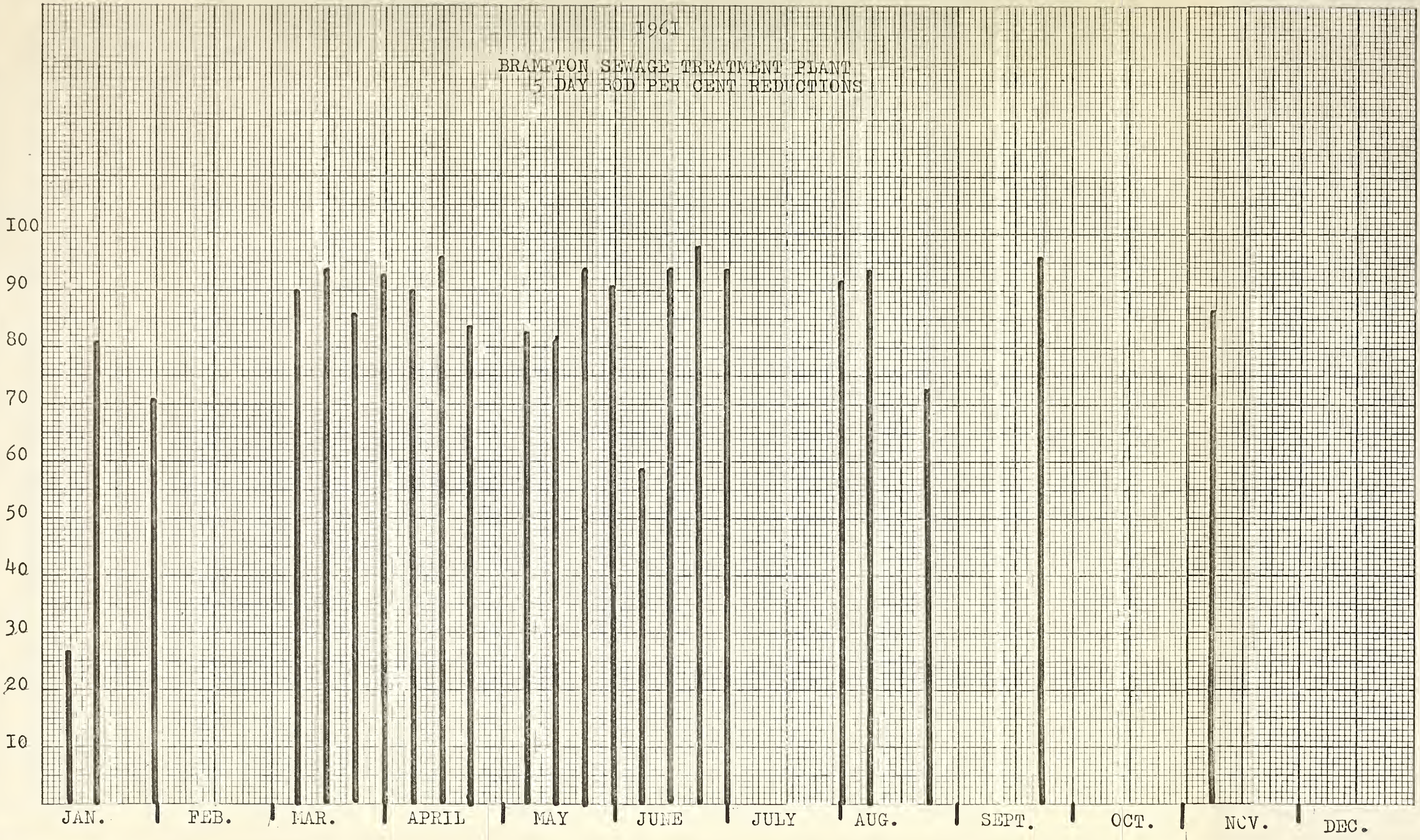
10 X 10 TO THE ½ INCH
MADE IN CANADA



1961
BRAMPTON SEWAGE TREATMENT PLANT
RAW SEWAGE

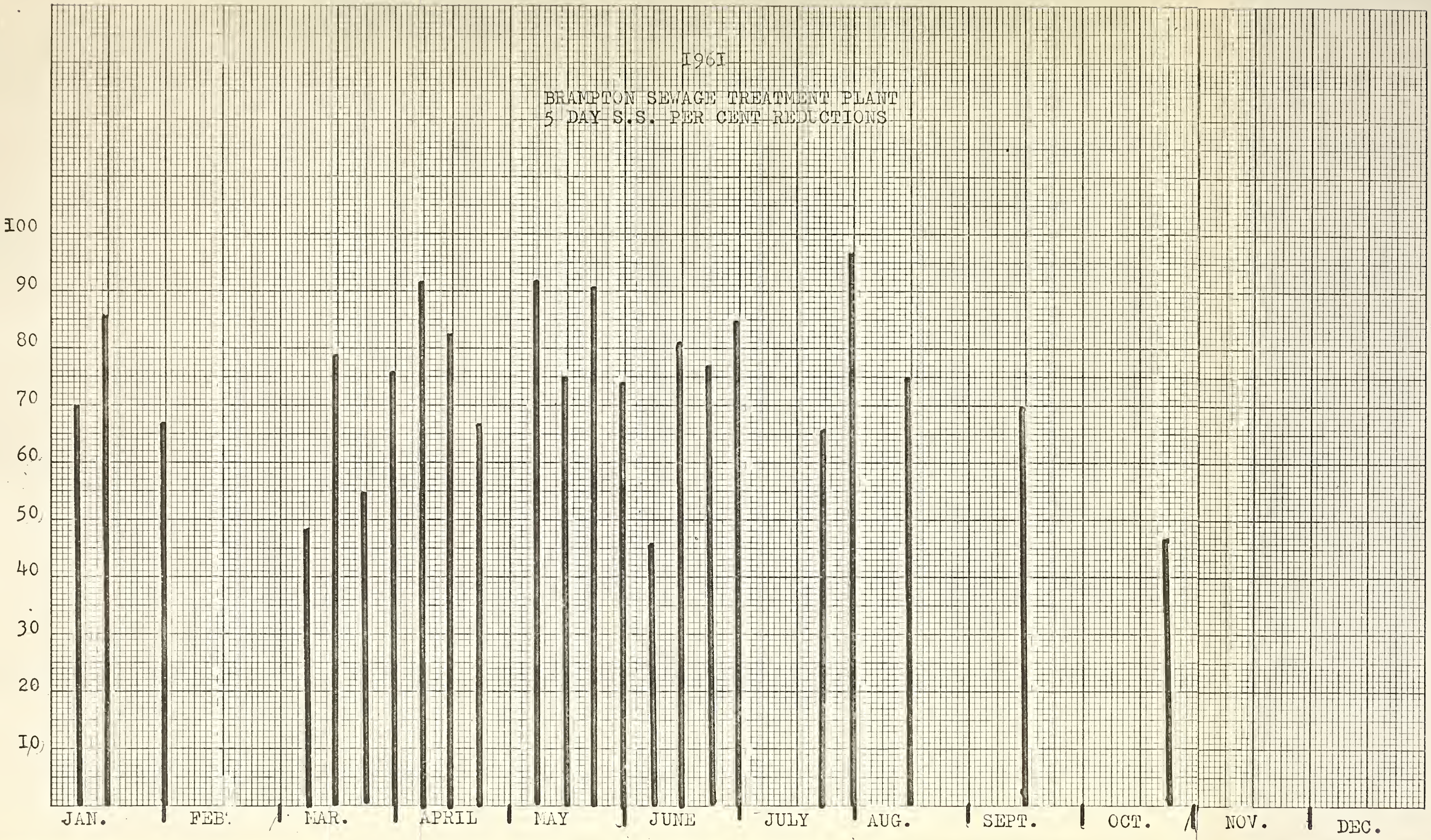
SAMPLING RESULTS

G8-11
10 X 10 TO THE ½ INCH
MADE IN CANADA
CC&S MICROGRAPH


1961

BRAMPTON SEWAGE TREATMENT PLANT
5 DAY BOD PER CENT REDUCTIONS

G8-11
10 X 10 TO THE ½ INCH
MADE IN CANADA
CC&S MICROGRAPH



1961

BRAMPTON SEWAGE TREATMENT PLANT
5 DAY S.S. PER CENT REDUCTIONS

COST FOR 1961

Operation	25,295.74
Reserve	5,752.57
Debt Retirement	18,850.71
Interest	54,044.50
TOTAL:	103,943.52

345,128 Million gallons of raw sewage were treated

782,750 lbs. of BOD were removed

947,721 lbs. of suspended solids were removed

Unit Operation Cost Per 1000 Gallons of Raw Sewage treated	7.3¢
" " " " lb.of BOD removed	3.2¢
" " " " lb.of S.S. "	2.6¢

OPERATIONAL BUDGET FORECAST FOR 1962 (S.T.P. ONLY)

Payroll	11,400.00
Fuel	1,400.00
Power	6,000.00
Chemical	4,000.00
General Supplies	1,100.00
Equipment	200.00
Repairs & Maintenance	600.00
Sundry	2,900.00
Water	1,000.00
Contingency	1,380.00
TOTAL:	29,980.00

TD
367
.A56
B734
1961

Brampton - Chinguacousy
sewage treatment plant : annual
report 1961.

82301

LABORATORY & RESEARCH LIBRARY
MINISTRY OF THE ENVIRONMENT